

## ABSTRACT OF THE DISCLOSURE

An infrared optical gas analyzer is provided with at least one infrared optical radiation source (6, 7), two multispectral detectors (1, 2) and a cuvette (12) containing the gas mixture to be measured. A process for determining gas concentrations with the infrared optical gas analyzer is also provided. The gas analyzer makes possible the simultaneous measurement and identification of a plurality of gases in a gas mixture with a compact design not prone to interference. The radiation emitted by an infrared optical radiation source (6) covers a first wavelength range  $[\lambda_1, \lambda_1]$  and the radiation emitted by an infrared optical radiation source (7) covers a second wavelength range  $[\lambda_2, \lambda_2]$  which is selected such that it is different from the first wavelength range. The paths of rays pass through the interior of the cuvette (12) and reach the multispectral detectors (1) and (2). These pass on the signals received to an evaluating and control unit (13), which calculates the gas concentrations taking into account cross sensitivities during the measurement by the multispectral detectors (1) and (2).